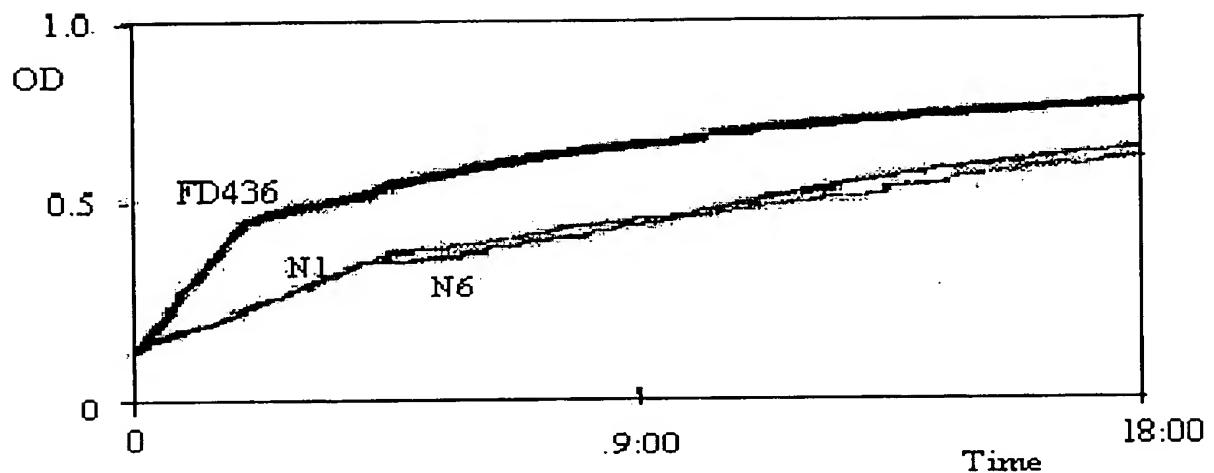
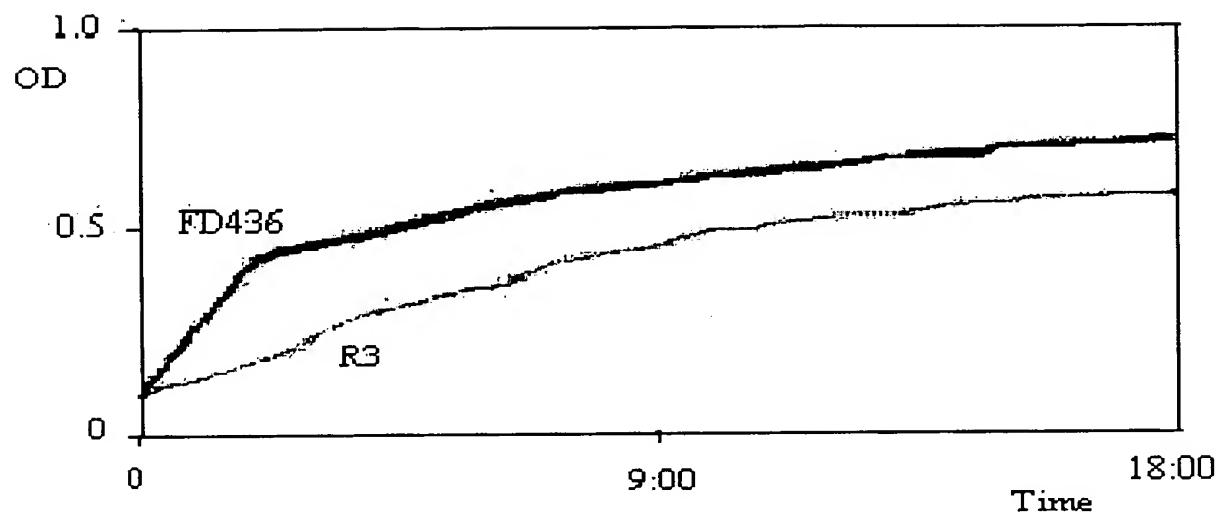
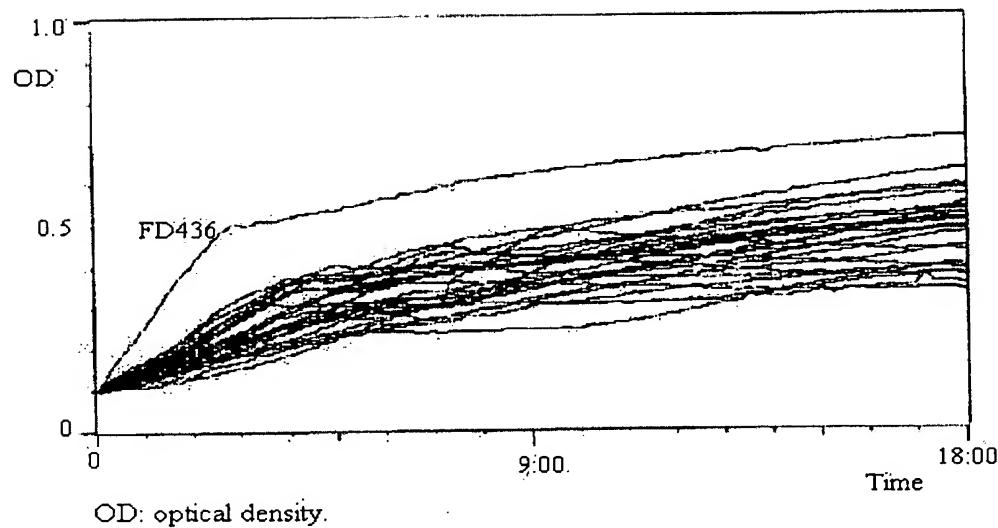
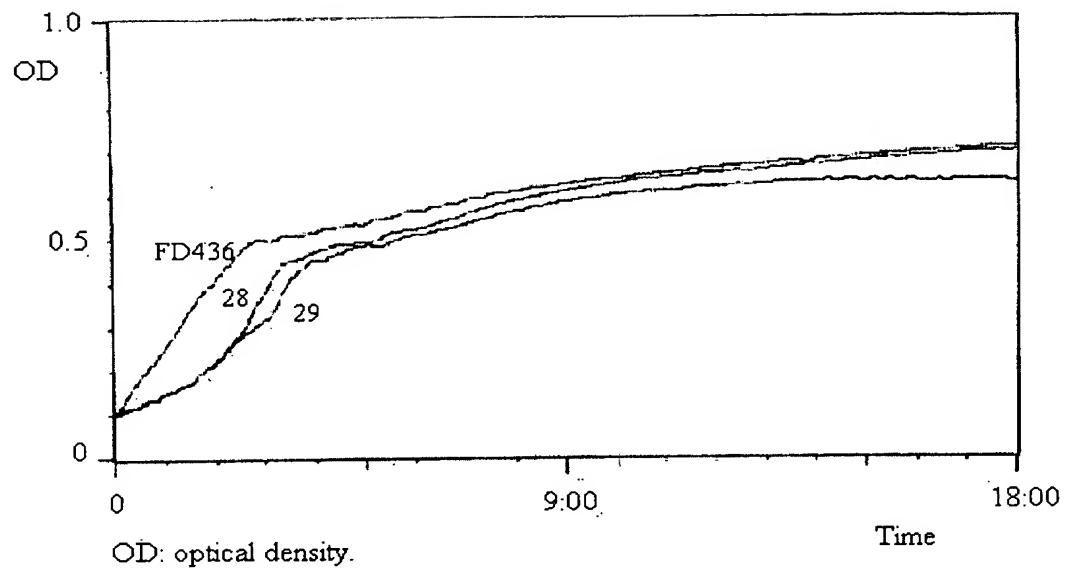
**FIGURE 1**

**FIGURE 2**



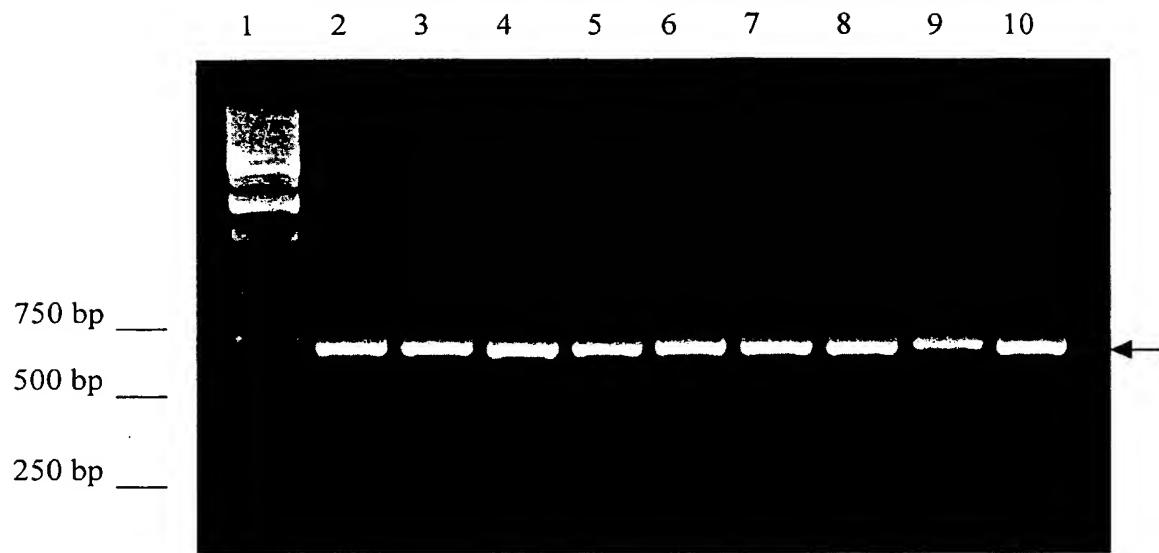
**FIGURE 3**

**FIGURE 4**

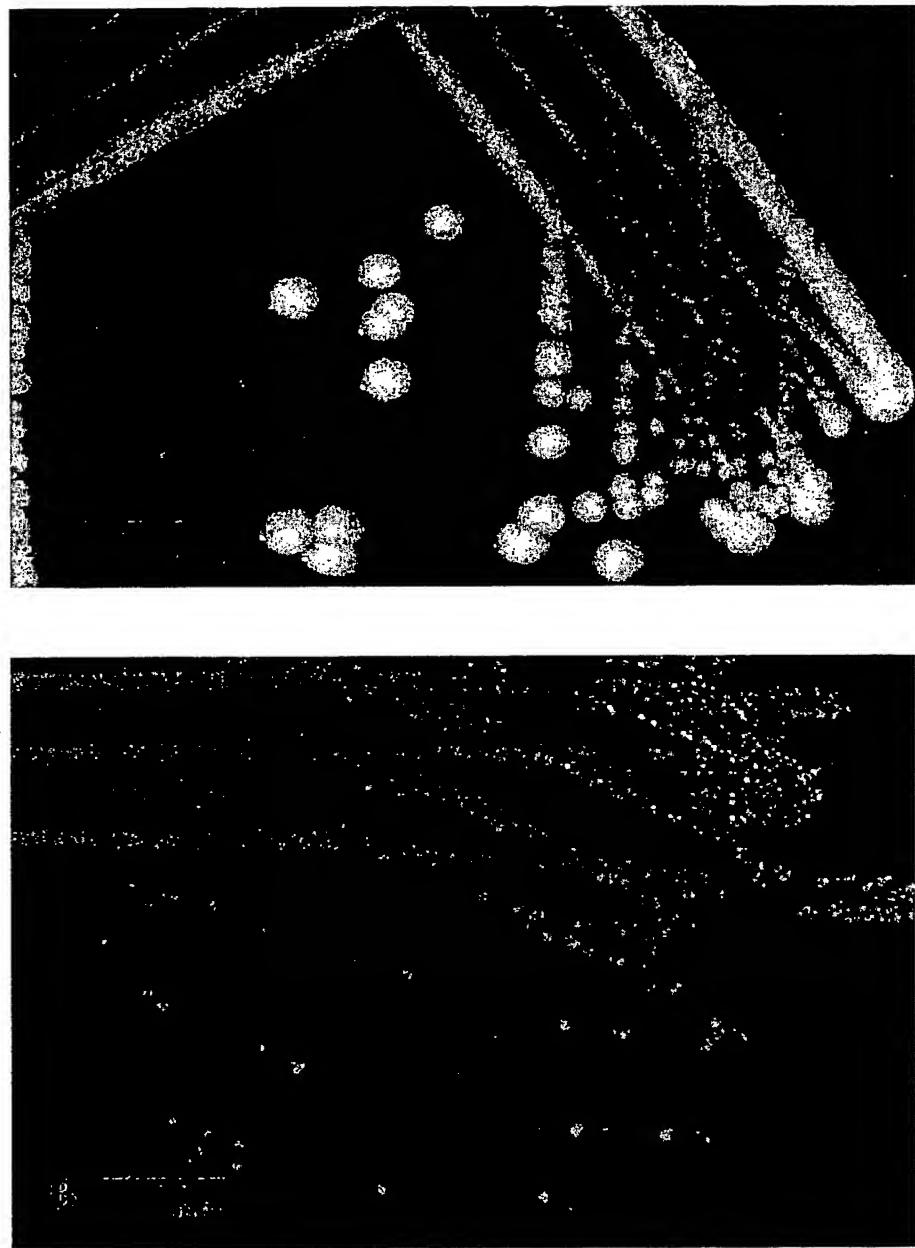
**FIGURE 5**



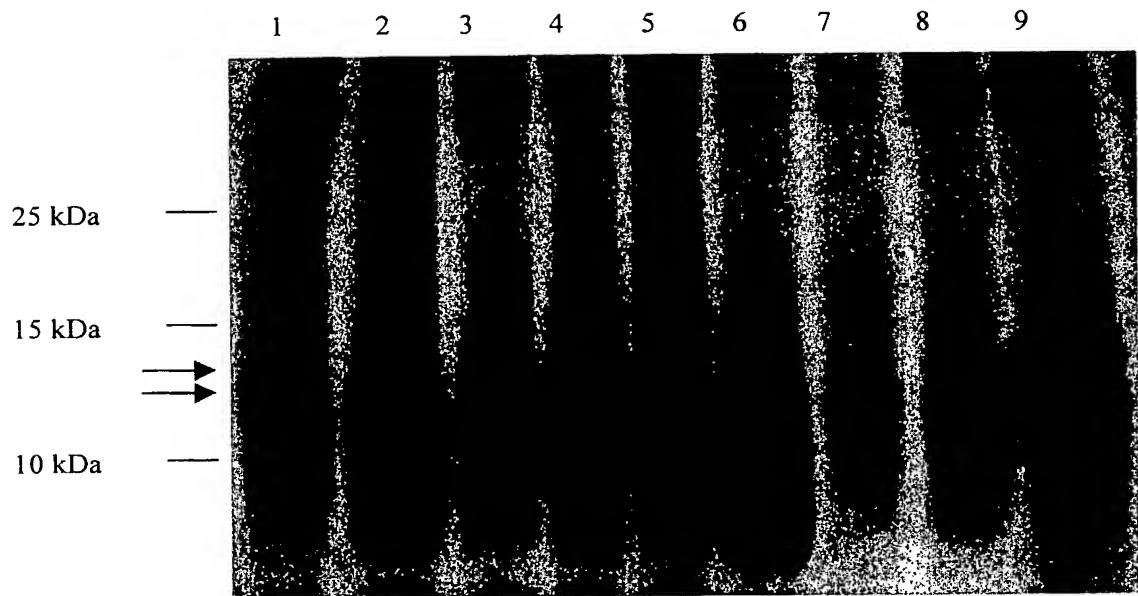
**FIGURE 6**



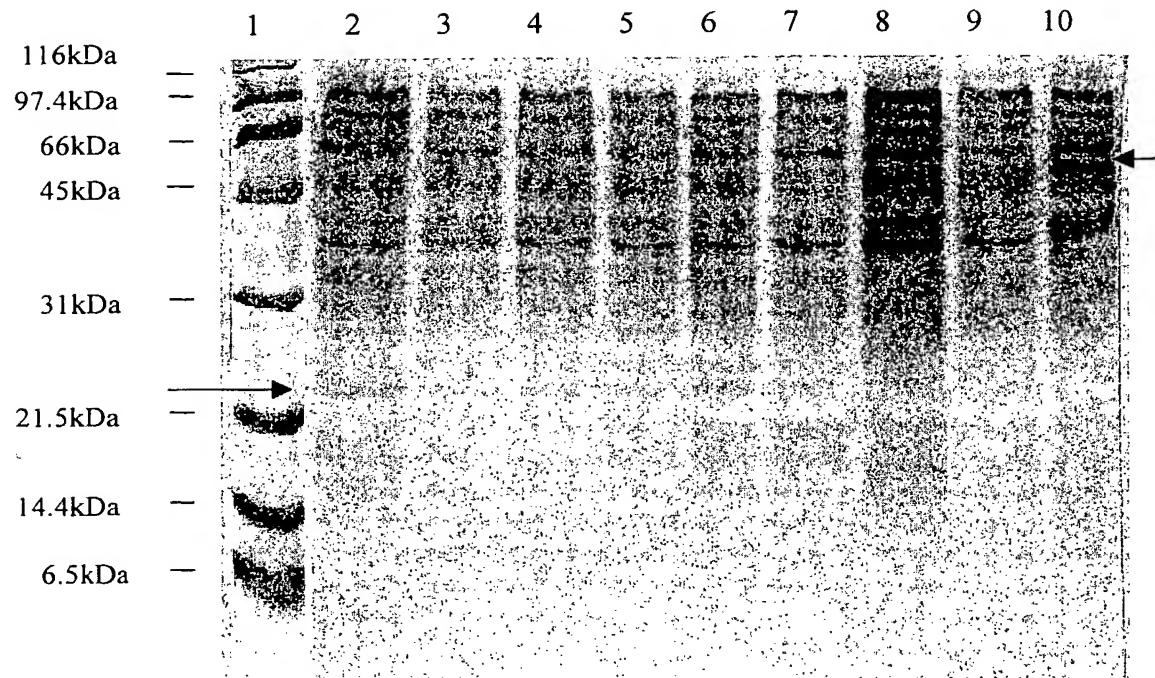
**FIGURE 7**

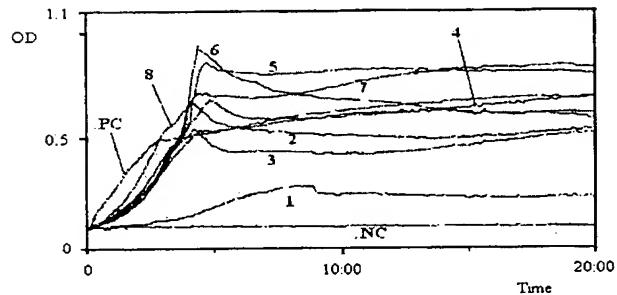
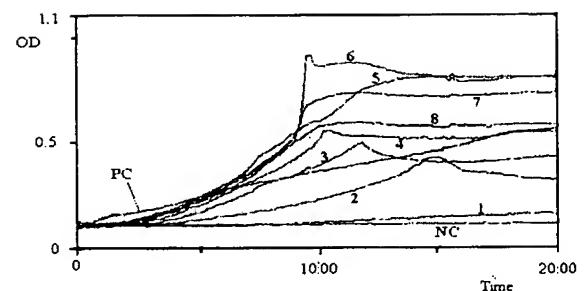
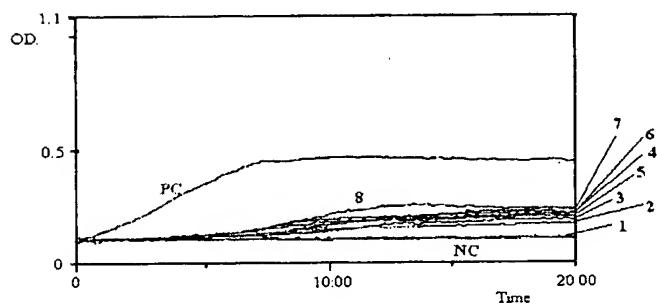
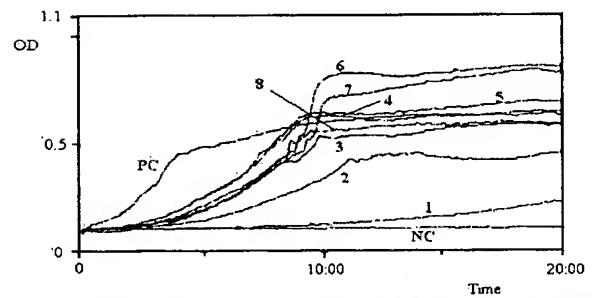


**FIGURE 8**



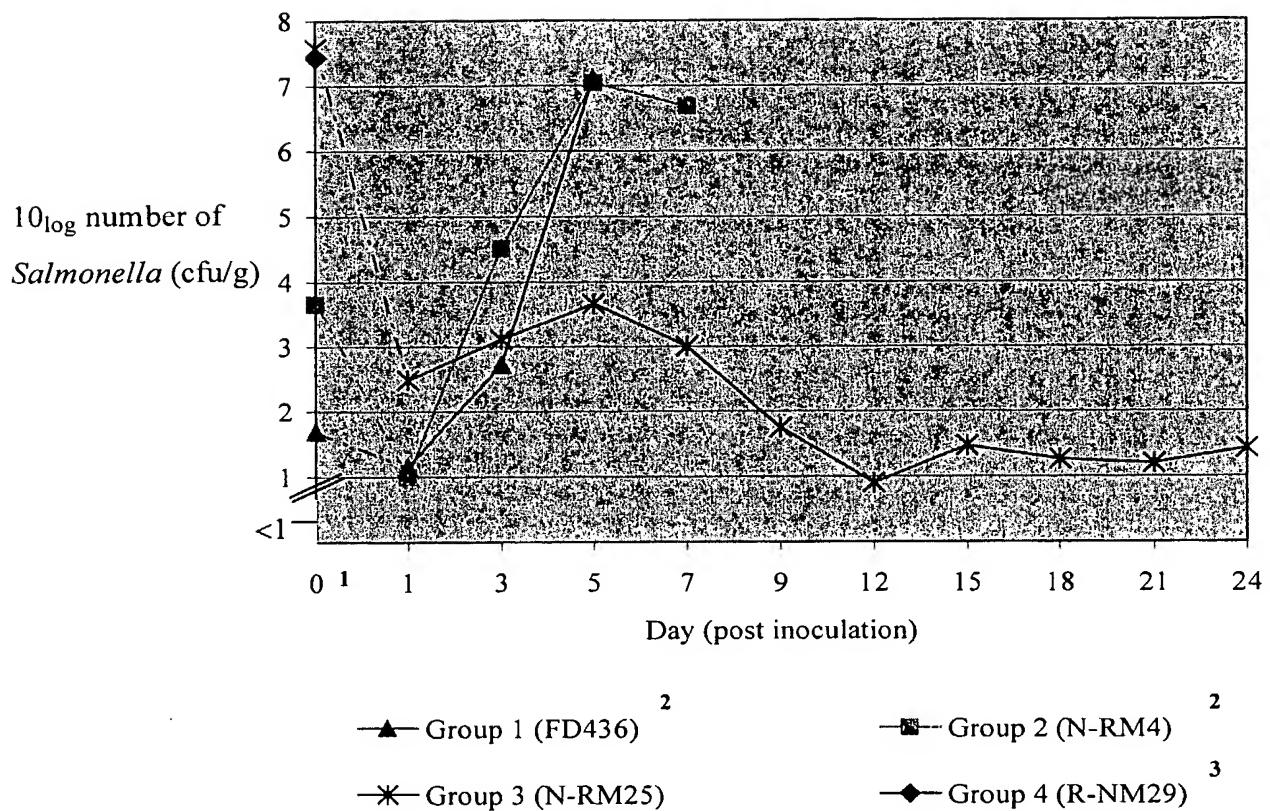
**FIGURE 9**

**FIGURE 10**

**A - FD436****B - N-RM4****C - N-RM25****D - R-NM29**

Concentration of bile salts No. 3. Figures in parentheses are estimated corresponding concentrations of crude bile salts.  
 1: 9.6% (28.8%), 2: 4.8% (14.4%), 3: 2.4% (7.2%), 4: 1.2% (3.6%), 5: 0.6% (1.8%),  
 6: 0.3% (0.9%), 7: 0.15% (0.45%), 8: 0.075% (0.225%).  
 PC: positive control, NC: negative control, OD: optimal density.

**FIGURE 11**

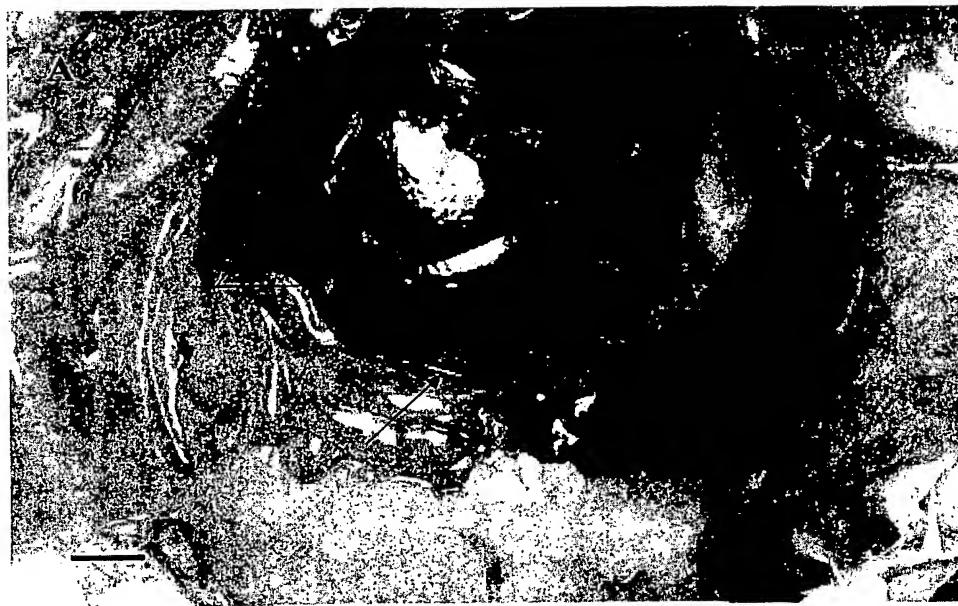


<sup>1</sup>: The numbers of *Salmonella* on Day 0 indicate the infectious doses of FD436, N-RM4, N-RM25 and R-NM29 inoculated to mice in each group. They do not represent the number of bacteria in the liver plus spleen.

<sup>2</sup>: All mice in Groups 1 and 2 were euthanased or died by Day 6 and Day 8 post-inoculation, respectively.

<sup>3</sup>: No *Salmonella* were isolated from the livers and spleens of mice in Group 4 throughout the nine-day observation period.

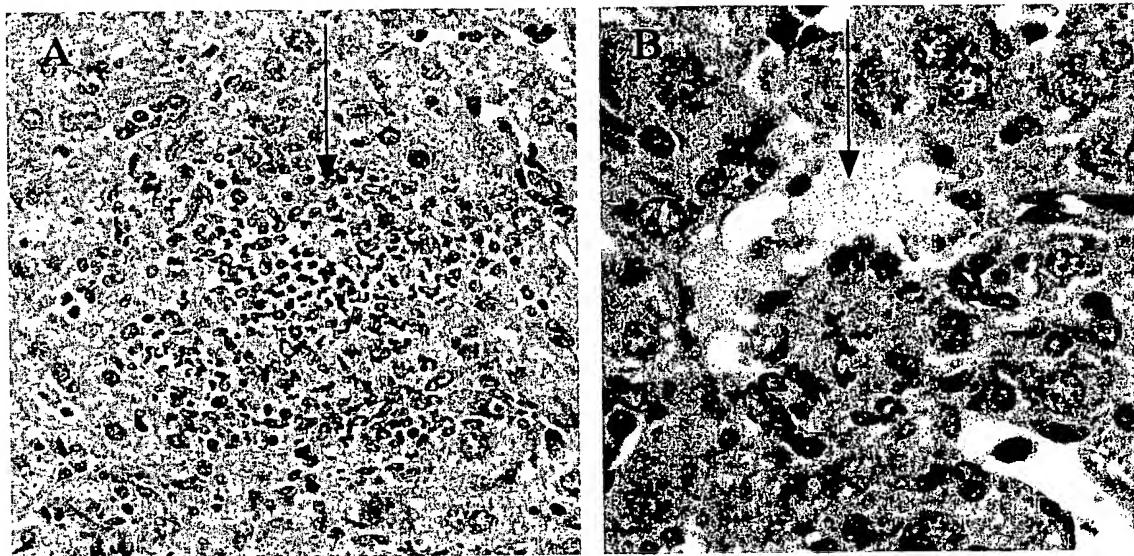
**FIGURE 12**



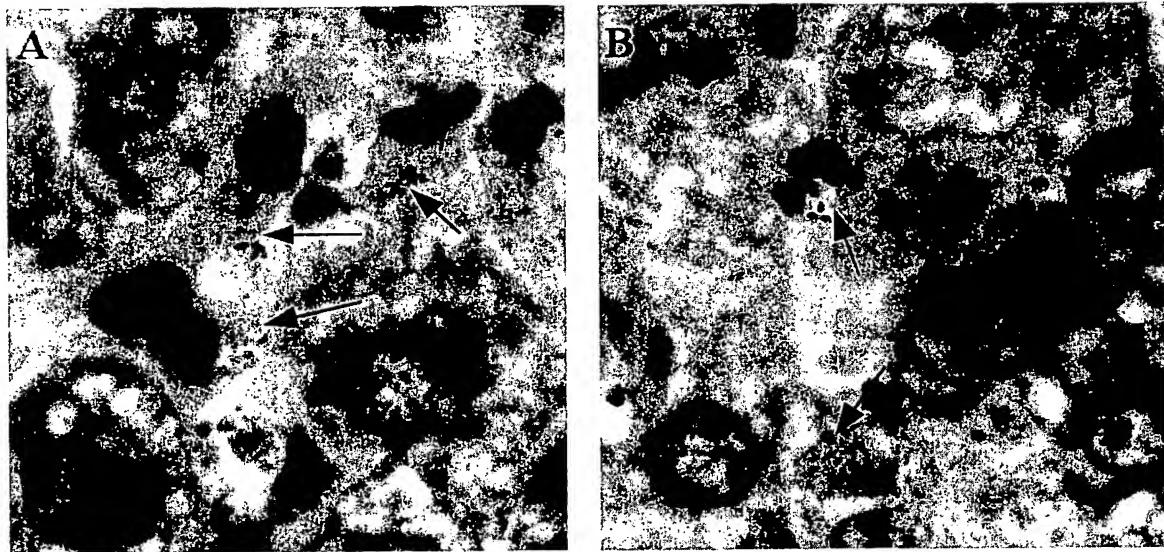
**FIGURE 13**



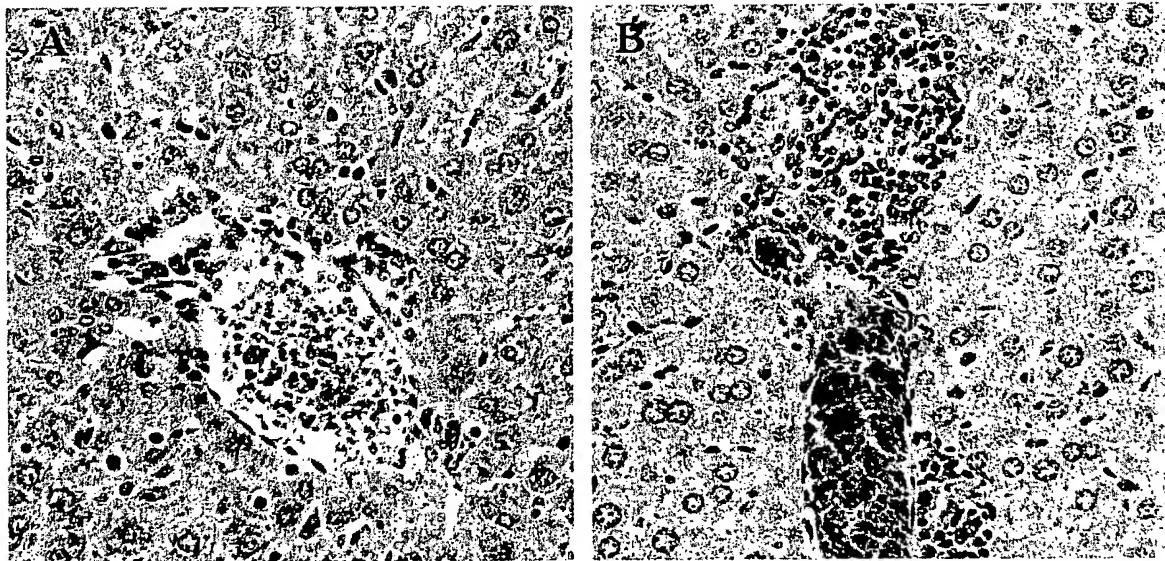
**FIGURE 14**



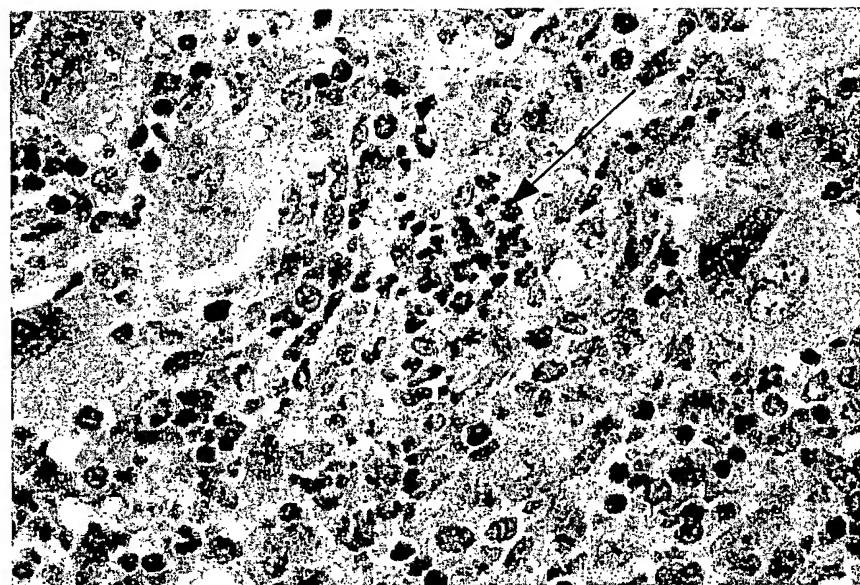
**FIGURE 15**



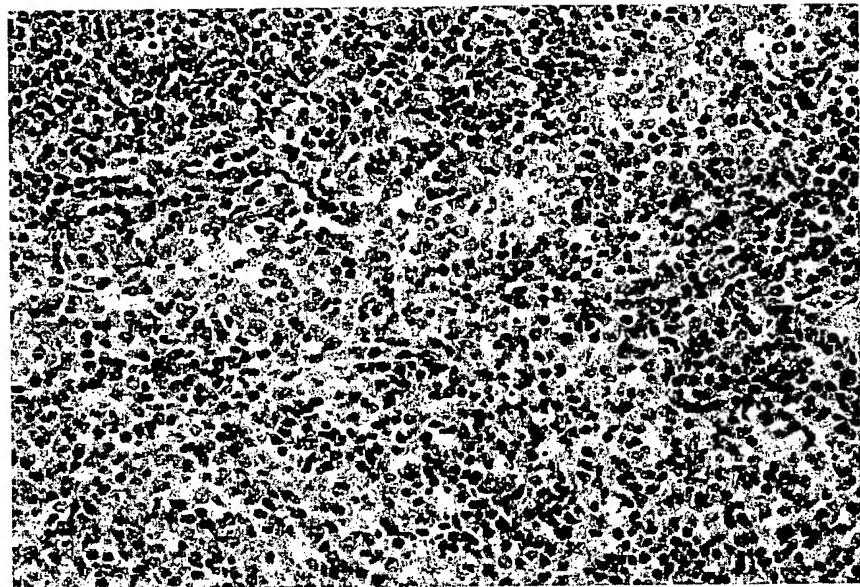
**FIGURE 16**



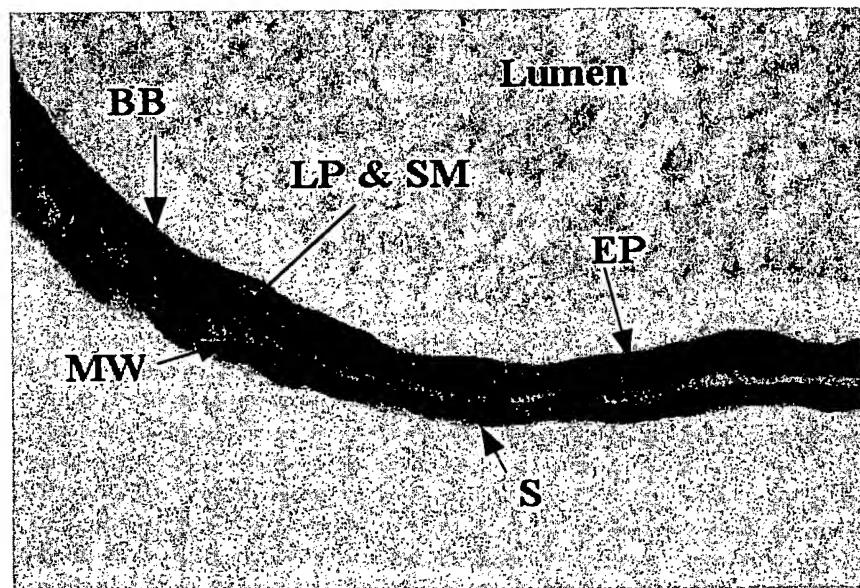
**FIGURE 17**



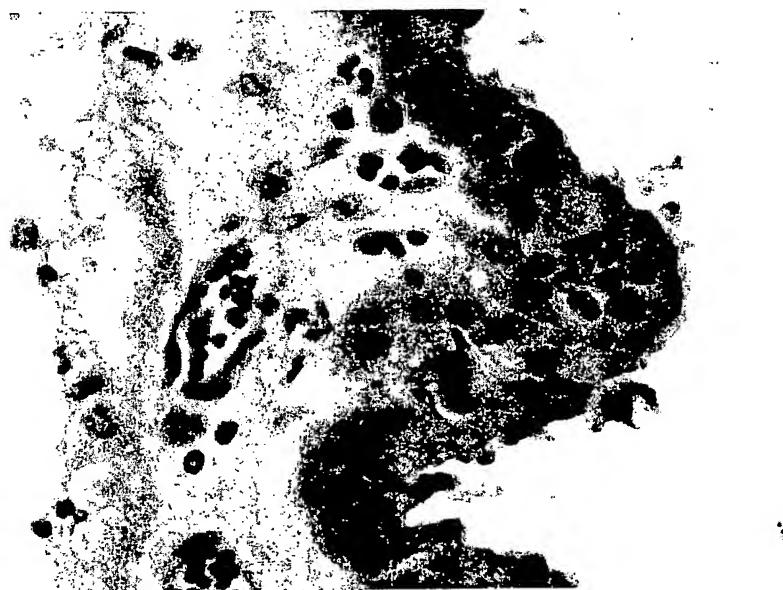
**FIGURE 18**



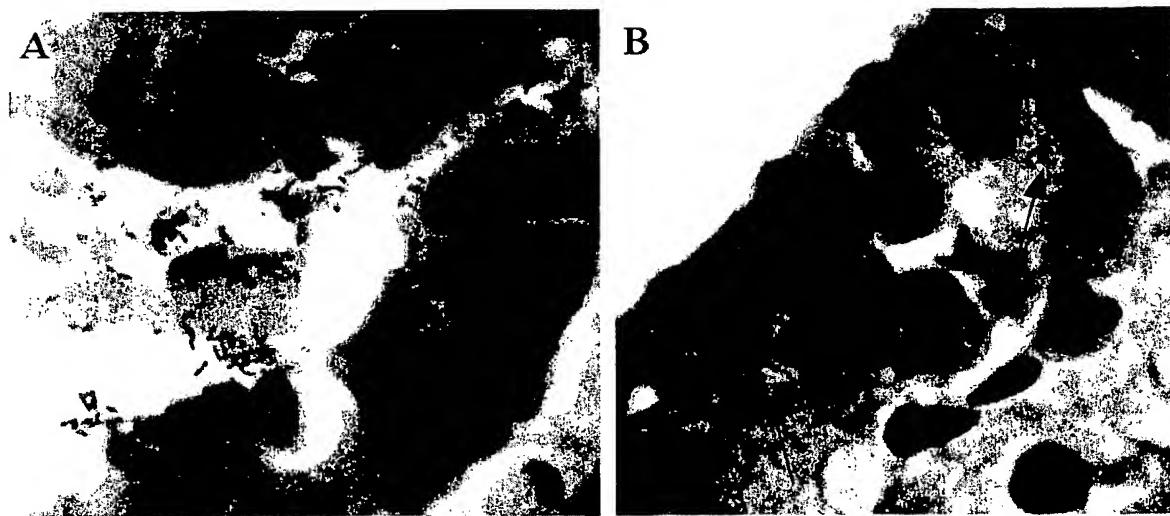
**FIGURE 19**



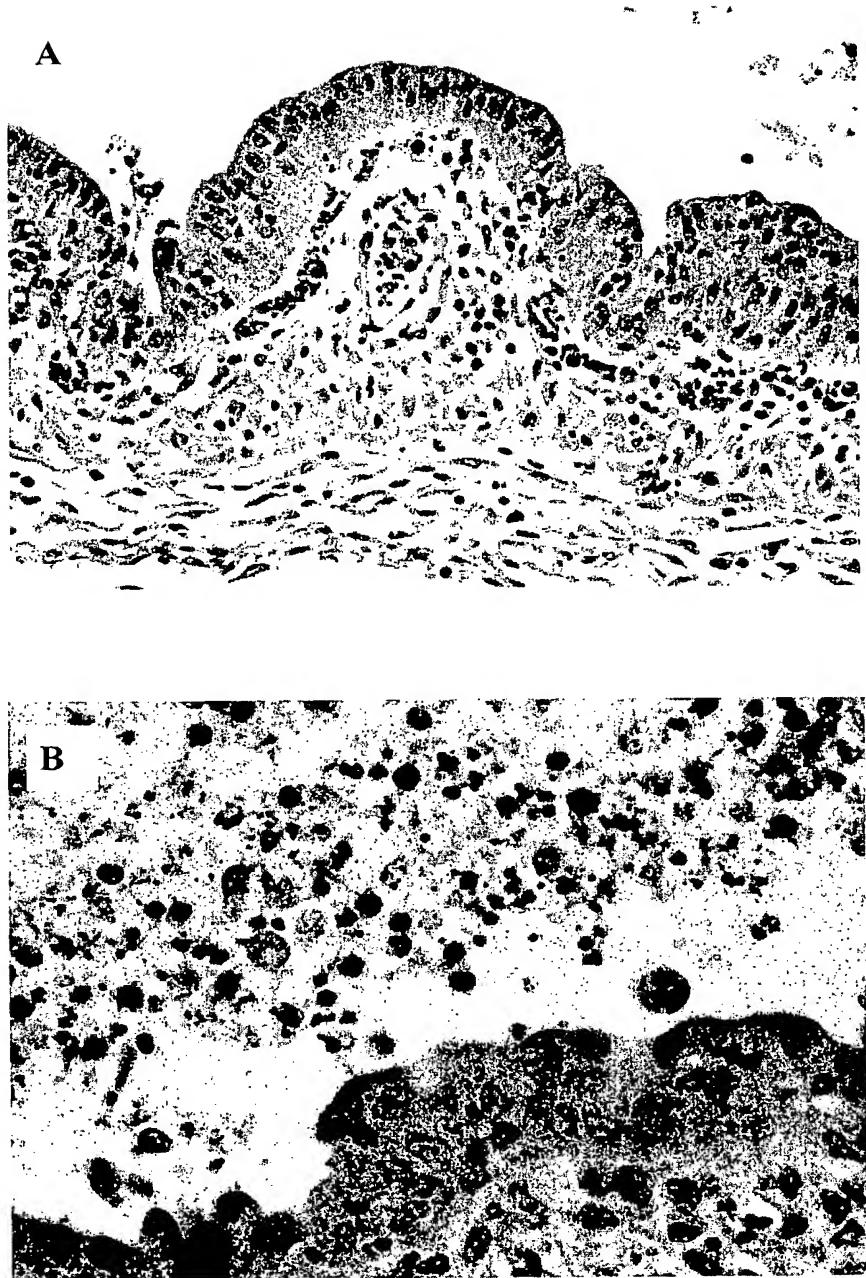
**FIGURE 20**



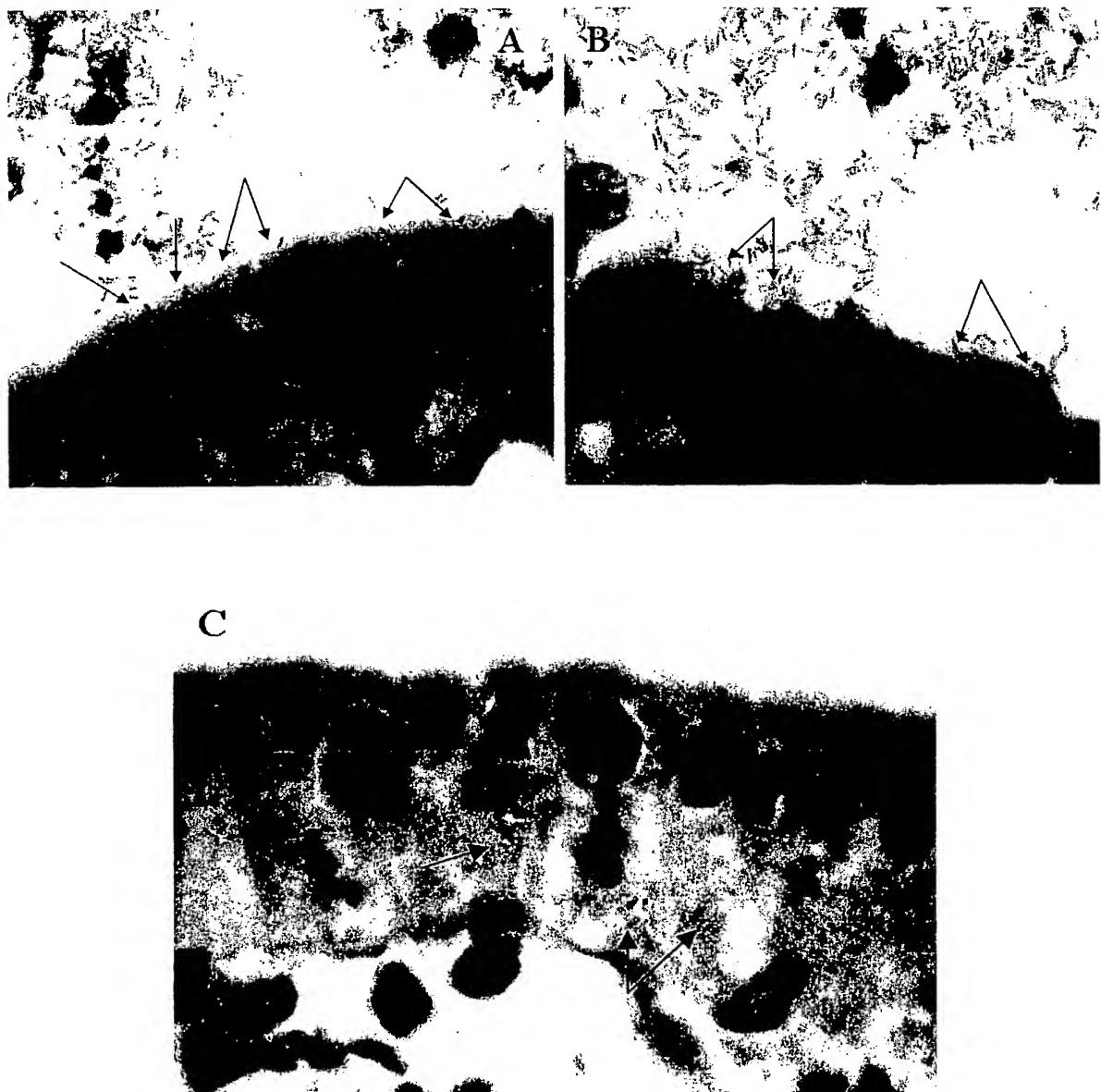
**FIGURE 21**



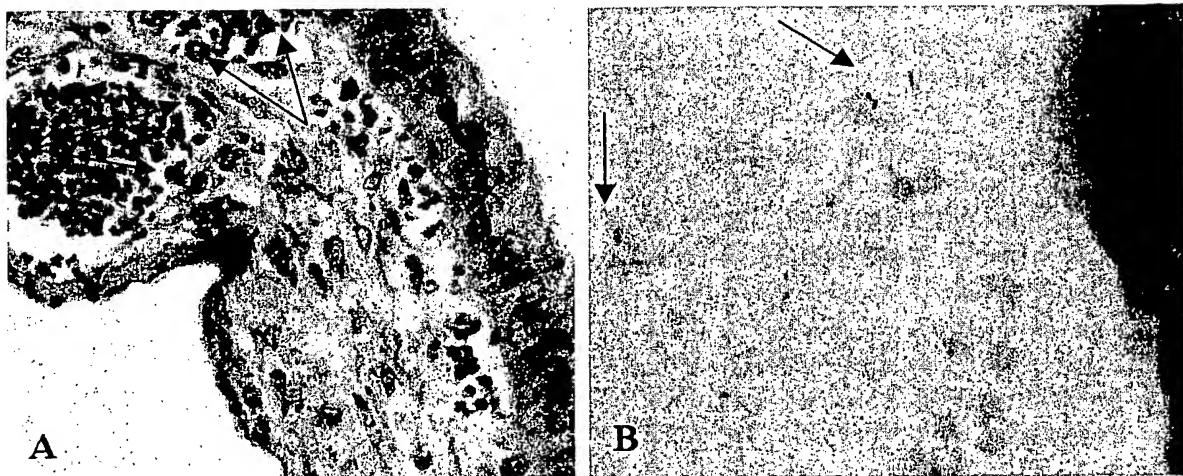
**FIGURE 22**

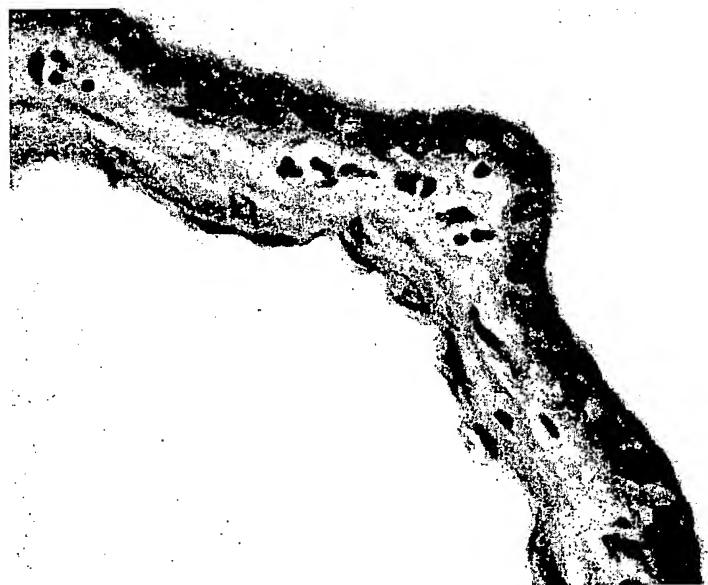


**FIGURE 23**

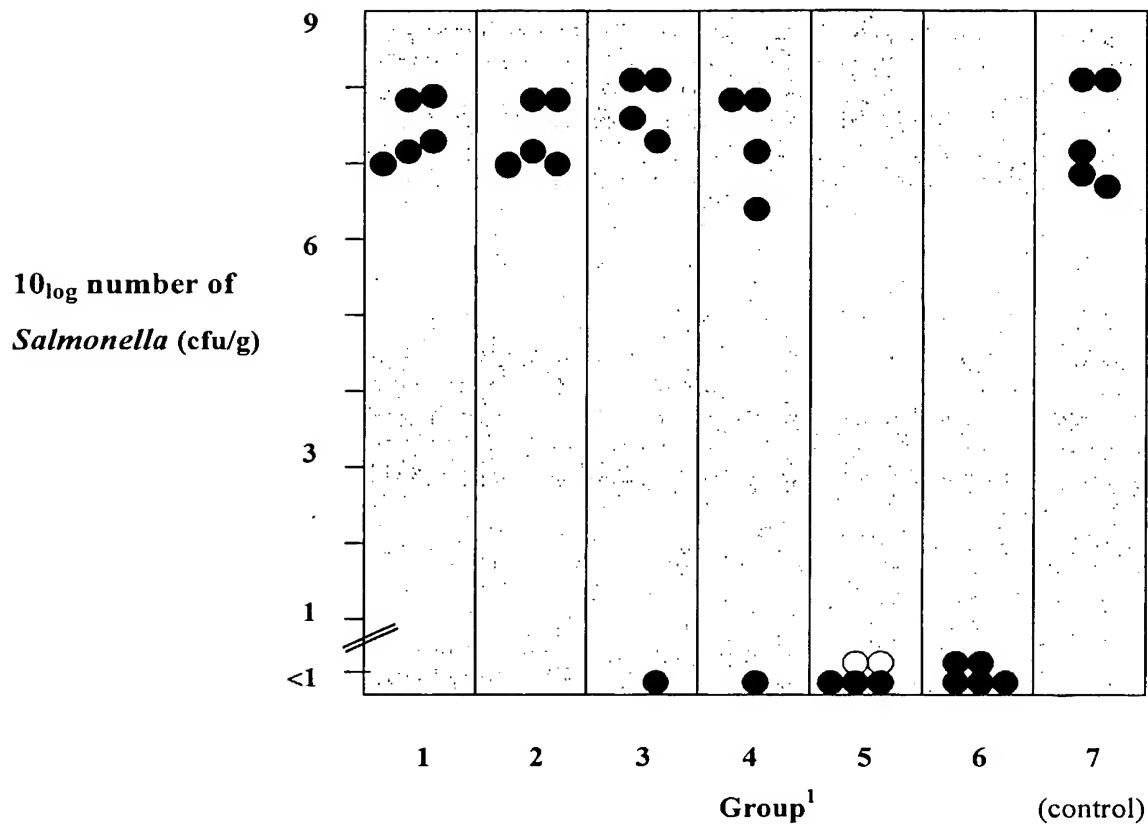


**FIGURE 24**

**FIGURE 25**



**FIGURE 26**

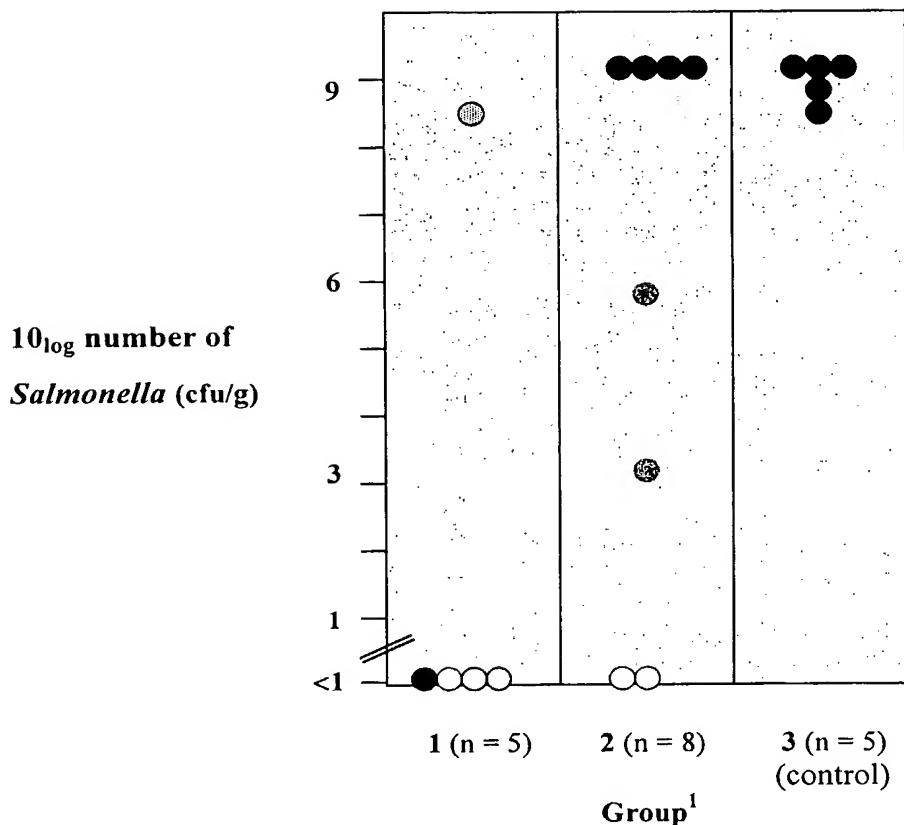


<sup>1</sup>: Vaccination: Group 1 – single low-dose, 2 – double low-dose, 3 – single medium-dose, 4 – double medium-dose, 5 – single high-dose, 6 – double high-dose.

Refer to Table 8.2 for detailed vaccination and challenge infection information.

- : Mice euthanased due to clinical signs of salmonellosis and from which the challenge strain was isolated using quantitative culture.
- : Mice that survived challenge infection and from which the challenge strain was isolated by enrichment only.
- : Mice that survived challenge infection and from which *Salmonella* was not isolated.

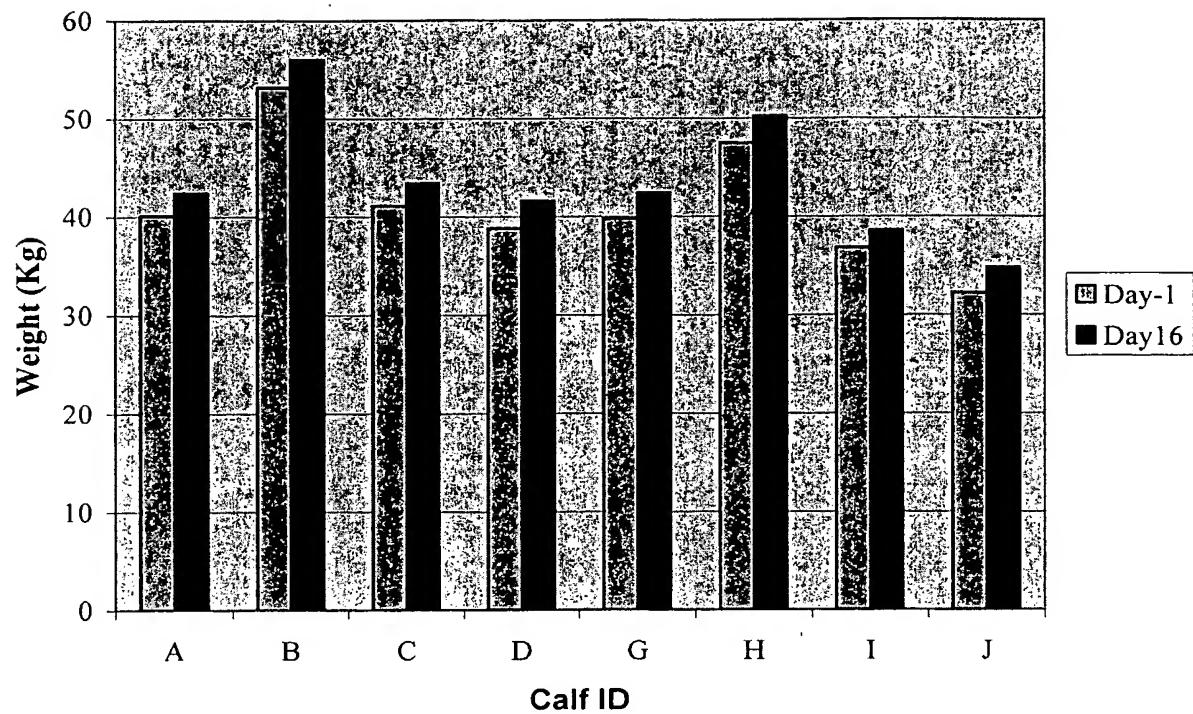
**FIGURE 27**



<sup>1</sup>: Vaccination: Group 1 - N-RM4, 2 - R-NM29. Refer to Table 8.3 for detailed vaccination and challenge infection information. n: number of tested mice.

- ◎: Mice that died before challenge infection and from which the corresponding vaccine strains were isolated using quantitative culture.
- : Mice that survived challenge infection and from which the corresponding vaccine strains were isolated by enrichment only.
- : Mice euthanased due to critical illness and from which the challenge strain was isolated using quantitative culture.
- ◎: Mice that survived challenge infection and from which the challenge strain was isolated using quantitative culture.
- : Mice that survived challenge infection and from which the challenge strain was isolated by enrichment only.
- : Mice that survived challenge infection and from which *Salmonella* was not isolated.

**FIGURE 28**

**FIGURE 29**

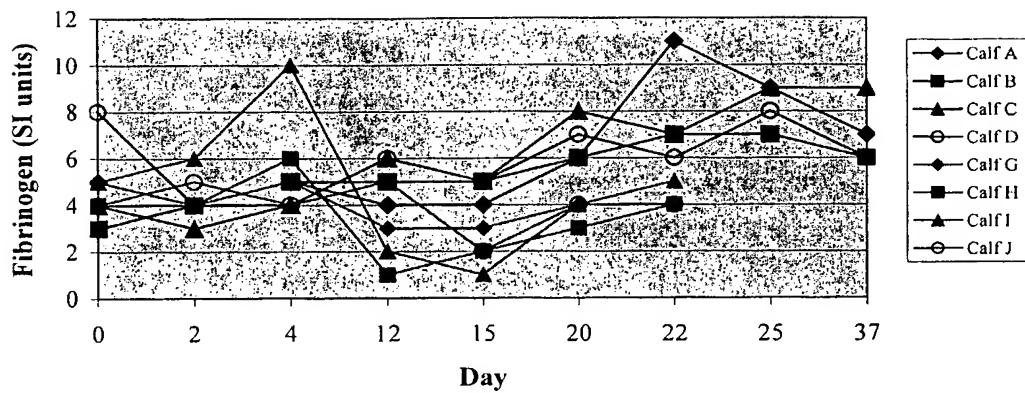


FIGURE 30

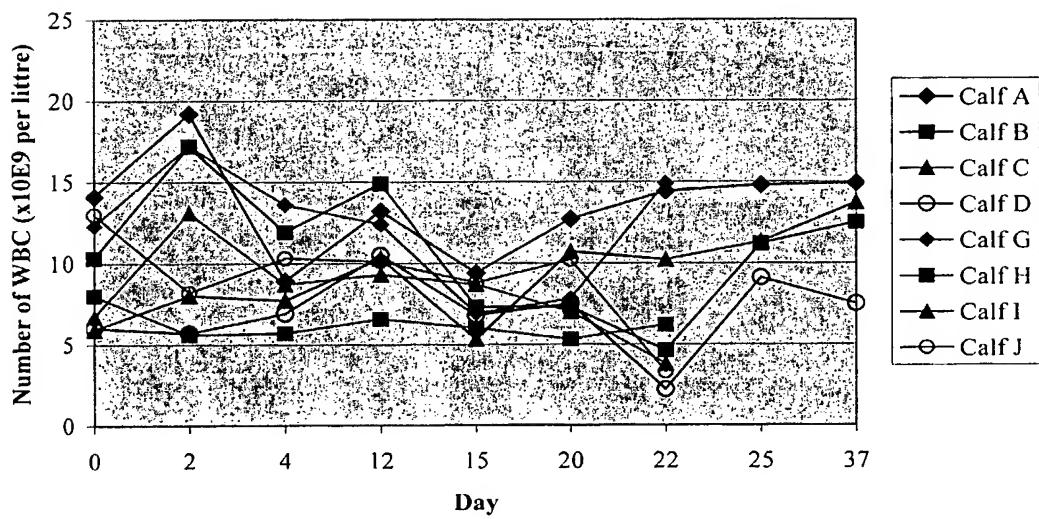
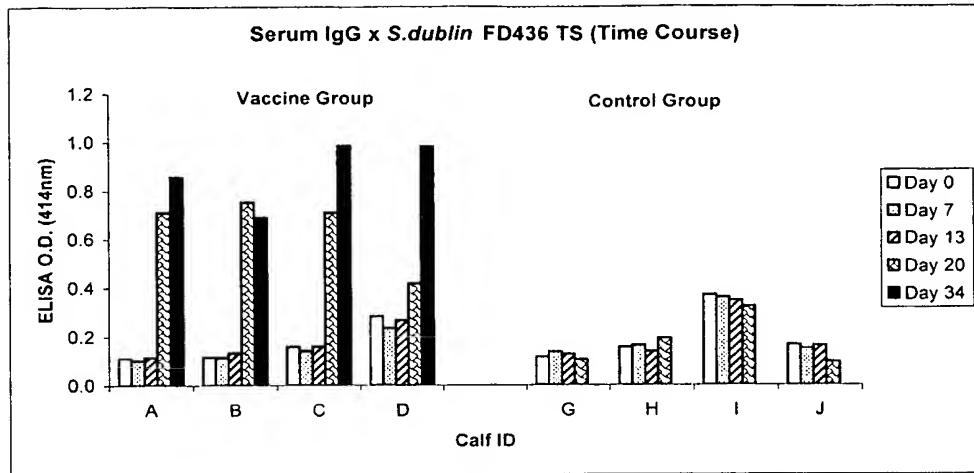
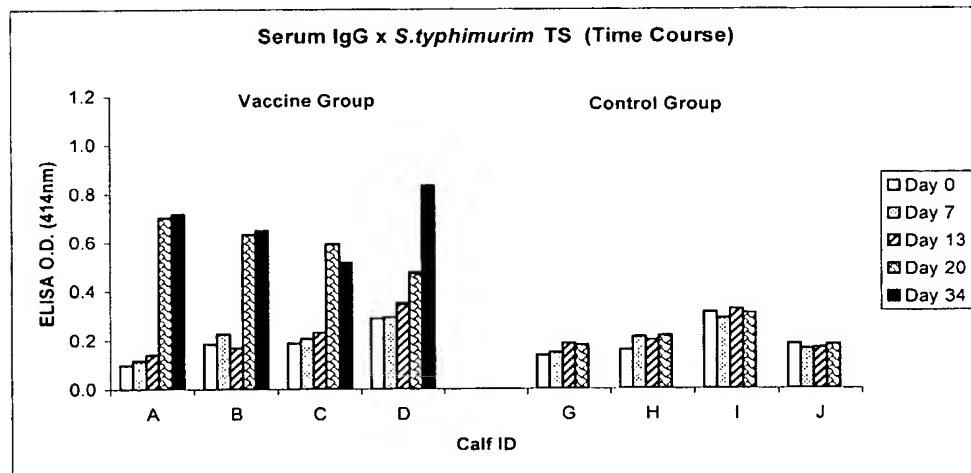


FIGURE 31



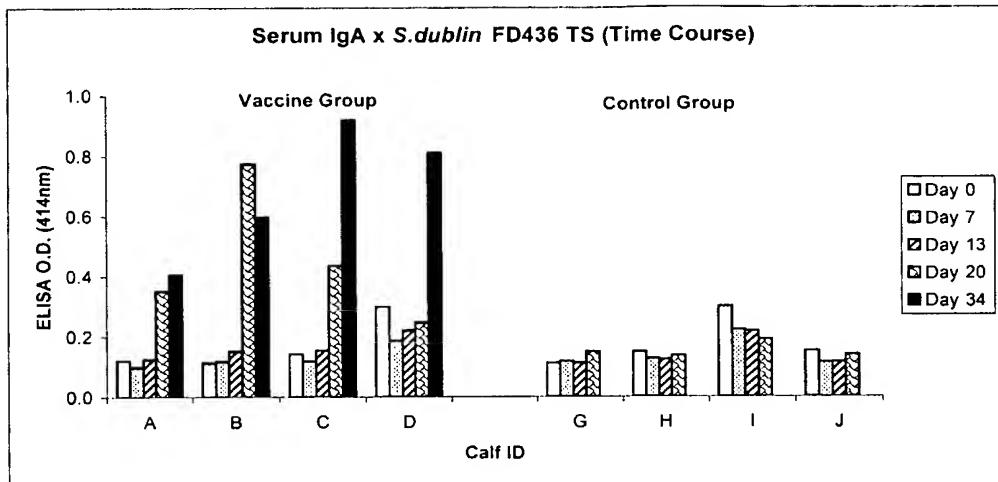
Day 0: 1<sup>st</sup> vaccination, Day 13: booster vaccination, Day 20: challenge infection with FD436.

**FIGURE 32**



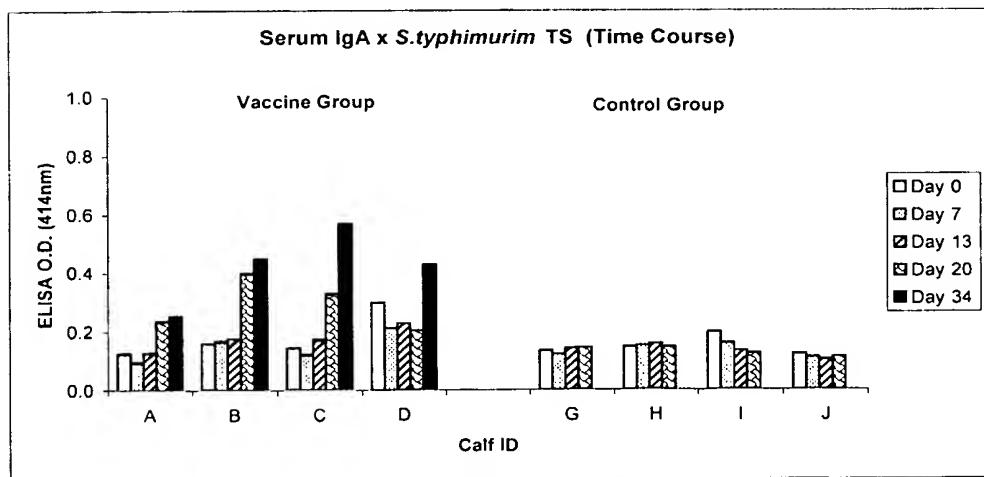
Day 0: 1<sup>st</sup> vaccination, Day 13: booster vaccination, Day 20: challenge infection with FD436.

**FIGURE 33**



Day 0: 1<sup>st</sup> vaccination, Day 13: booster vaccination, Day 20: challenge infection with FD436.

**FIGURE 34**



Day 0: 1<sup>st</sup> vaccination, Day 13: booster vaccination, Day 20: challenge infection with FD436.

**FIGURE 35**